P2 Innovative Coatings and Coating Equipment Vendor Meeting Minutes for October 29, 1997

SUMMARY OF MINUTES

ETV VENDOR MEETING

HVLP COATING AND APPLICATION EQUIPMENT

Concurrent Technologies Corporation (CTC), Johnstown, PA; October 29, 1997

The Meeting Highlights

The ETV Coatings and Coating Equipment Program (CCEP) held a technology provider meeting at Concurrent Technologies Corporation (CTC) in October, 1997. The meeting was for High-Volume, Low-Pressure (HVLP) coating application equipment manufacturers who had responded to the Request for Technologies (RFT) for HVLP equipment and were interested in participating in the program.

The ETV CCEP received a great deal of productive input from the technology providers present (six companies represented) at the meeting. Topics of discussion throughout the day focused on the following items: the purpose of the ETV CCEP, the type of equipment to submit for testing, the test protocol and verification statement, and issues faced by the technology providers. The major action items to accomplish after the meeting include: revising and finalizing the test protocol, building or acquiring multiple-pass capabilities (for achieving the 50% overlap on the panels) and sending a follow-up letter and meeting summary to technology providers interested in participating in the ETV CCEP.

The purpose of the ETV CCEP is to verify the environmental and performance characteristics of coatings and coating equipment. In this case, the focus is on HVLP equipment. HVLP equipment has been shown to reduce emissions by improving the transfer efficiency of the paint application process, and its use has been enforced or mandated in some areas. The technology provider will choose the particular piece or pieces of equipment to submit based on their expertise and the constant parameters that will be used throughout the testing, such as the coating, the substrate coated, the target film thickness, etc. The technology providers present at the meeting agreed that it would not be as important to verify the transfer efficiency of HVLP equipment as it is to verify that the equipment IS indeed HVLP equipment and can perform as well as any other piece of spray equipment. Furthermore, the technology providers agreed that the ETV CCEP needs to use multiple passes in the testing to get a good feel for finish quality. Therefore, the test protocol will be revised to verify the following for HVLP equipment and the applied coating: the equipment performs as HVLP according to the definition (as

defined by Rule 1151 of the South Coast Air Quality Management District (SCAQMD)), distinctness of image, dry film thickness, gloss (at 90(), and visual assessment. Also, the ETV CCEP will acquire equipment capable of performing multiple passes on the test panels at 50% overlap.

The technology providers present at the meeting agreed that the ETV CCEP may be able to help them with issues such as: resistance of users of conventional equipment (or other less efficient equipment) to change, reaching out to users who feel they have to go above the 10 psi pressure limit for their current HVLP guns to achieve good quality finishes, addressing the issue of falsely-labeled HVLP spray guns, reaching out to smaller shops, enforcing/obeying regulations, etc. Technology providers who participate in the ETV CCEP and have a verification statement can show consumers that their equipment is truly HVLP (thereby providing a pollution prevention benefit) and that it can perform as well as other spray equipment. The ETV CCEP can send the message to users that there is a better alternative to conventional equipment. This program is not about setting standards or making comparisons, it is about verifying environmental performance and documenting quality.

Meeting Summary

(Note that "Aud." indicates an audience comment, as opposed to an ETV (meaning ETV CCEP) comment)

Brian Schweitzer gave the introductions and spoke for a short time about CTC. Mike Kosusko presented a general overview of the entire Environmental Technology Verification (ETV) Program. Brian Schweitzer presented material specific to the ETV CCEP.

Question: What is the time frame for responding for participation in the program?
Answer: 30 days of the meeting. NOTE: Time frame and schedule were revised based on the outcome of the meeting. The revised schedule includes the following items:

- Technology Providers provide comments on the draft summary test procedure, the test parameters and the verification factors, and the meeting summary (12/97).
- ETV CCEP provides a draft equipment test protocol to the technology providers (01/98) and technology providers provide comments on the test protocol.
- ETV CCEP provides a letter to the technology providers with the final cost estimate and test information, requesting commitment to participate (02/98).
- ETV CCEP test plans approved by CTC, the EPA, and each technology provider (03/98).
- ETV CCEP testing begins for High Volume, Low Pressure liquid spray equipment (04/98).

Question: What if there are many products submitted--then program funds would be very low because of so many products--then what?
Answer: Brian proceeded to explain the issue of the ETV CCEP covering part of the

testing cost for one product vs. multiple products and the costs associated with each of these options (in general terms). Limited ETV CCEP funds are available to contribute to initial product testing. The goal is for the technology provider to contribute at least 20% of the cost. If the ETV CCEP cannot support testing of all products at 80%, which may be the case here, we will cover the first product from each technology provider at 80% and have the technology providers pay for testing of subsequent products. Eventually under ETV, the technology providers will pay all testing costs.

Question: Upon completion of testing, what is the time frame for the issuance of the verification statement?
Answer: Mike Kosusko explained that this is a big issue for the ETV Program as a whole and that they are shooting for a goal of 6 months. The current trend has been around one year for the verification statement. It is well understood that technology is constantly changing and that it is important to get this done quickly. The ETV CCEP will work on a "model" verification report to get through the EPA approval process and then the real test information and data can simply be filled in as the information is received.

Question: What becomes of the test report?
Answer: The test report becomes an official EPA report; the Technology Provider approves of the verification statement and its release; upon approval, it goes to the ETV Website for posting and outreach.

Question: What product do we submit? We have numerous to choose from.
Answer: The criterion is that is must be HVLP equipment (defined by a tip pressure of <10 psi) and it must be market ready. Also, there will be a standard coating used and standard substrate painted.

Comment (Aud.): Yes, but the equipment we select will be industry-dependent.

Comment (Aud.): Maybe it would be beneficial to have a consultation with OAQPS to identify industry segments where they would like to see the most gain. Zero in on the problem.

Response: The ETV CCEP has a couple of people from the OAQPS as a part of its Stakeholder group.

11:00 am

Craig Fox began his presentation about the equipment testing and the test protocol

Several comments were made about the fact that each piece of equipment is industry specific and even further, customer specific. "Metal Parts" is too broad of an industry to target.

Response: The ETV CCEP is trying to do something that is limited by time and funds. The ETV CCEP cannot perform each and every test based on each user's needs.

Comment (ETV): The primary goal of ETV is environmental benefits/issues.

Question: The finish quality is dependent on pressure. At what pressure are you going to operate the equipment?
Answer: Whatever pressure is recommended by the technology provider, provided that it is between 0.1 and 10 psi at the tip (definition of HVLP).

Comment (Aud.): With the standard product and set-up that is proposed in the test plan, you are not going to get a feel for finish quality. You cannot judge this with one pass. You need a 50% overlap. TE is secondary to quality when it comes to verifying HVLP equipment. People already know that it is more efficient.

Comment (Aud.): The use of HVLP equipment is well established in the automotive industry and there is movement in other industries as well. Sales are increasing. California and 17 other states (or portions of those states) are regulating.

Question: (From the ETV CCEP) So what are the issues for HVLP equipment providers?
Answer: (Audience) Resistance to change, costs are sometimes an issue, small shops, regulations, "cheaters".

Comment (Aud.): It would be beneficial to establish what is HVLP and what isn't, and what the benefits of HVLP are. Some guns are used at 22-23 psi and yet are stamped as HVLP guns.

Question: (From the ETV CCEP) So who has established the definition of an HVLP gun?
Answer: (Audience) Rule 1151, SCAQMD.

Comment (Aud.): Nothing prevents manufacturers from stamping a gun "HVLP." The end user is not aware of this.

Comment (Aud.): Also, the gun may be an "HVLP" gun, but if it is used out of compliance (as many are), no one would know because the regulations are not enforced. It is easy to go out of compliance and not get caught.

Comment (Aud.): What we want to do, as technology providers, is sell more equipment and what the EPA wants to do is lessen the emissions. Maybe what you need to verify is not that it's more efficient (TE) but that it operates as a true HVLP gun and gives a high quality finish. It is already accepted that the TE of HVLP equipment is higher than that of conventional air spray guns. (Therefore, skip the baseline testing.).

Question: (From the ETV CCEP) So the big questions are: What is your barrier to selling more HVLP guns? Why aren't there more HVLP guns out there? What problems are you facing?
Answer: (Audience) Maybe we need more inspectors as it is now, it's entirely up to the end users to use the guns in compliance. We need the users to use the proper guns and to use them in compliance.

Question: Is there a quick test to see whether guns are in compliance or not?
*Answer:*Yes, there is a test cap to determine pressures on HVLP guns.

Comment (Aud.): The advantage of the ETV CCEP to the technology providers is that if the technology provider tests one or two products and receives a verification statement, then consumers will know that they are telling the truth about their product being a "true" HVLP gun.

Comment (Aud.): There is a "speed limit" on spray guns--the maximum inlet pressure to achieve a certain pressure at the tip.

1:45 p.m.

Lunch, Tour, Discussion Continued.

Comment (Aud.): The ETV CCEP Stakeholder group needs more user input as to what their needs and concerns are. The users are on the receiving end. Try conference calls or video-conferencing if they cannot travel to Stakeholder meetings.

Response: The ETV CCEP has tried to get end users to be a part of the Stakeholder group. It's a tough job to get them involved.

Comment (Aud.): The ETV CCEP can help us by verifying that it is possible to get the production and quality needed at 10 psi at the tip. This will promote the use of true HVLP guns.

Comment (Aud.): The only other way this will happen is if there is a government rule or regulation requiring everyone to use true HVLP guns and this isn't going to happen, so the ETV CCEP is another way of getting this accomplished.

Comment (Aud.): TE testing is not really necessary--that fact is widely accepted. Need to verify the quality of the finish.

Comment (ETV): The key to today's meeting is as follows: Do you see a benefit of the ETV CCEP? What testing should be done? What factors are needed to develop an acceptable test plan? Can we do anything that is not industry specific?

Comment (Aud.): This program can send the message to users that CAS is not as efficient as it should be. Users are losing money in wasted paint, damaging the environment, etc. The message will be to try something else. It's not mandated, but try it.

Comment (Aud.): Also needed are education and training--to avoid misuse. If users are getting the proper finish, there is no reason to "crank up the pressure."

Comment (Aud.): This program sets precedents without enacting a law. It's a good idea. Alternative compliance.

Comment (Aud.): So the ETV CCEP will help to define HVLP, state that the equipment IS HVLP, and that it is possible to use HVLP and be at or exceed current production, quality, etc. The program will show that the equipment was ran and tested at a max. of 10 psi or less at the tip and that the equipment achieved a satisfactory result (or not).

Comment (Aud.): The test protocol should set the inlet pressure to keep the "cheaters" out. Maybe set it around 40 psi (or even higher) at the inlet, as long as it is <10 psi at the tip. Or you could measure the tip pressure at various inlet pressures.

Comment (ETV): Keep in mind that this program is not setting standards, just documenting quality.

Comment (Aud.): The four criteria for quality that are needed in the test protocol are: Film Thickness (dry), Gloss at 90 degrees, Distinctness of Image, and a Visual Assessment. The ETV CCEP needs to specify the coating and the substrate.

Discussion

So, for this verification, the ETV CCEP needs to:

1. Define HVLP
2. Verify that it is HVLP equipment, run as HVLP equipment
3. Identify and characterize the coating used (avoid black and white colors)
4. Identify and characterize the part coated
5. Set line speed
6. Obtain constant film thickness
7. Use multiple passes at manufacturer's settings
8. Use paint from same lot/batch
9. Use paint at same temperature
10. Flash/dwell times between passes
11. Use bake time and temperature recommended by the paint manufacturer
12. Note the amount of paint used

The tests for finish quality will include:

- Dry Film Thickness
- Gloss at 90 Degrees
- DOI
- Visual Assessment (made by the same person/persons each time)

Recommendations:

- Using a larger panel?

- Uusing a Spraymation machine or other automatic reciprocator or robot, etc. for overlap capabilities.
- "John Deere Green" or a mid-range blue for the color of the coating.

The ETV CCEP will work with the technology providers and provide them with the info they need to "give it their best shot" with the HVLP equipment of their choice. The technology providers can help to set-up the equipment for testing.

The ETV CCEP is NOT making comparisons.

Thank you.